Title (en)

SEMICONDUCTOR PACKAGE HAVING FILLER METAL OF GOLD/SILVER/COPPER ALLOY

Title (de)

HALBLEITERKAPSELUNG MIT FÜLLMETALL AUS GOLD-/SILBER-/KUPFERLEGIERUNG

Title (fr)

BOITIER A SEMI-CONDUCTEURS COMPRENANT UN METAL D'APPORT FORME D'UN ALLIAGE OR/ARGENT/CUIVRE

Publication

EP 1625618 A4 20100331 (EN)

Application

EP 04752628 A 20040519

Priority

- US 2004015639 W 20040519
- US 44254903 A 20030521

Abstract (en)

[origin: US2004232529A1] A semiconductor package to which a potential difference is applied has two or more of the components thereof bound together using a filler metal. The filler metal is a solid solution structure in which the metallic components are atomically dispersed, and may comprise an alloy of gold, silver and copper. A preferred form of the filler metal comprises 60Au20Ag20Cu. Such filler metals in accordance with the invention provide the advantages of silver-based filler metals without the silver migration that leads to eventual shorting of the semiconductor package. When water condenses to form a continuous layer thereof within the semiconductor package due to moisture seeping into the package and temperature changes, the silver within the filler metal does not ionize, and therefore a buildup of silver deposits and eventual shorting of the package does not occur.

IPC 8 full level

H01L 23/02 (2006.01); **H01L 23/057** (2006.01); **H01L 23/10** (2006.01)

CPC (source: EP KR US)

H01L 23/057 (2013.01 - EP US); **H01L 23/10** (2013.01 - EP US); **H01L 23/52** (2013.01 - KR); H01L 24/48 (2013.01 - EP US); H01L 2224/48091 (2013.01 - EP US); H01L 2224/48247 (2013.01 - EP US); H01L 2924/00014 (2013.01 - EP US); H01L 2924/01046 (2013.01 - EP US); H01L 2924/01068 (2013.01 - EP US); H01L 2924/01079 (2013.01 - EP US); H01L 2924/15153 (2013.01 - EP US); H01L 2924/1517 (2013.01 - EP US); H01L 2924/16152 (2013.01 - EP US)

Citation (search report)

- [I] US 6261868 B1 20010717 - MILLER GERALD R [US], et al
- [A] US 5043139 A 19910827 - CARNALL JR EDWARD [US], et al
- [I] EP 0932199 A2 19990728 - SAINT GOBAIN NORTON IND CERAMI [US]
- See references of WO 2004107436A1

Designated contracting state (EPC)

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DOCDB simple family (publication)

US 2004232529 A1 20041125; **US 6900525 B2 20050531**; AT E546833 T1 20120315; CA 2526484 A1 20041209; CA 2526484 C 20130430; CN 1802740 A 20060712; CN 1802740 B 20110330; EP 1625618 A1 20060215; EP 1625618 A4 20100331; EP 1625618 B1 20120222; HK 1086948 A1 20060929; IL 172051 A 20131231; JP 2007528590 A 20071011; JP 5097403 B2 20121212; KR 101109803 B1 20120227; KR 20060020634 A 20060306; WO 2004107436 A1 20041209

DOCDB simple family (application)

US 44254903 A 20030521; AT 04752628 T 20040519; CA 2526484 A 20040519; CN 200480015893 A 20040519; EP 04752628 A 20040519; HK 06108860 A 20060810; IL 17205105 A 20051120; JP 2006533207 A 20040519; KR 20057022222 A 20040519; US 2004015639 W 20040519